

REMARKS

Claims 1 and 27 have been amended to clarify the invention, and new claims 36 and 37 have been added. Accordingly, claims 1-37 are pending.

The Examiner rejected claims 1-37 under 35 U.S.C. 102(b) as being anticipated by Chong (U.S. 6,070,251). The Examiner's rejection is traversed as follows.

Claim 1 is directed towards a "method for implementing high availability in a fibre channel switch in a storage area network." Claim 1 also requires "identifying a message that was sent from a first application running on an active supervisor in a fibre channel switch." Thus, the identified message was sent from a first application running in an active supervisor of a fibre channel switch. Claim 1 also requires "determining high availability characteristics associated with the message, wherein high availability characteristics provide information for synchronizing a second application running on a standby supervisor in the fibre channel switch with the first application" and "providing the message to the second application running on the standby supervisor when high availability characteristics indicate that the message should be mirrored." Claim 1 further requires "not providing the message to the second application running on the standby supervisor when high availability characteristics does not indicate that the message should be mirrored." That is, high availability characteristics of this identified message sent from the first application is determined and used to facilitate synchronization between the first application of the active supervisor and a second application of a standby supervisor in the same fibre channel switch. These high availability characteristics are used to choose between various actions for synchronization. If it is determined that the high availability characteristics of the message indicate mirroring, then the message is mirrored to the second application of the standby supervisor. Otherwise, if no mirroring is indicated, the message is not mirrored. Such flexible handling of the message is an efficient approach for performing synchronization between the active and standby applications since not all messages may require mirroring. For example, only messages that need to be mirrored may have a "mirroring" indication. Claim 27 requires mechanisms for performing the operations of claim 1.

The cited reference Chong describes a conventional failover system having a primary controller and a secondary controller. Since both controllers have the same address, data is received by both controllers by a host. See Col. 3, Lines 29-30 & Lines 45-48. However, Chong does not appear to teach mirroring a message sent from a first application on an active supervisor to a second application of a standby supervisor based on whether high availability characteristics indicate that the message should be mirrored, in the manner claimed. The Examiner cites Col. 2, Lines 56 through Col. 3, Line 67 for teaching synchronization of data between the primary and secondary controllers so that the secondary controller can take over if the primary controller fails. It is respectfully submitted that these cited passages appear to teach that synchronization of data is accomplished for all data being received by both controllers. Synchronization is also discussed in relation to another context, besides mirroring data, in that Chong also appears to describe synchronization between both controllers to prevent data overruns between the PSOC of the controllers. When each PSOC of each controller has available memory space, it notifies the other PSOC of the other controller. Supra Lines 50-67. This synchronization appears to not deal with mirroring of data sent by an application of the primary controller, but rather, merely notification of available memory by each controller to the other controller. Chong does not appear to teach determining high availability characteristics associated with a message sent from a first application and then basing a mirroring operation on whether or not these characteristics indicate that the message should be mirrored, in the manner claimed. In sum, these cited passages appear to not teach mirroring a message sent from a first application on an active supervisor to a second application of a standby supervisor based on whether high availability characteristics indicate that the message should be mirrored. In contrast, Chong teaches that all data is received by the primary and secondary controllers, rather than mirroring data based on whether or not high availability characteristics indicate mirroring. In light of the forgoing, it is submitted that claims 1 and 27 are patentable over Chong.

Claim 13 is directed towards a "fibre channel switch" that includes "a fibre channel line card coupled to an external fibre channel network entity." Claim 13 also requires the fibre channel switch to include "a first supervisor coupled to the fibre channel line card through a backplane" and "a second supervisor coupled to the first supervisor." Claim 13 further requires that "wherein the first supervisor is configured to identify a message from the external fibre channel network entity that alters the state of the first supervisor and send an acknowledgement

to the external fibre channel network entity before the message is passed to the second supervisor." This approach allows efficient handling of messages by the active supervisor, while maintaining synchronization with the standby supervisor with respect to such message.


The cited references also fail to teach or suggest "a fibre channel line card coupled to an external fibre channel network entity" and a "first supervisor [that] is configured to identify a message from the external fibre channel network entity that alters the state of the first supervisor and send an acknowledgement to the external fibre channel network entity before the message is passed to the second supervisor" as recited in claim 13. The Examiner has failed to cite portions of the Chong references that teach the limitations of claim 13. It is respectfully submitted that the cited references fail to teach or suggest such limitations.

The Examiner's rejections of the dependent claims are also respectfully traversed. However, to expedite prosecution, all of these claims will not be argued separately. Claims 2-12, 14-26, and 28-37 each depend directly or indirectly from independent claims 1, 13, or 27 and, therefore, are respectfully submitted to be patentable over cited art for at least the reasons set forth above with respect to claims 1, 13, or 27. Further, the dependent claims require additional elements that when considered in context of the claimed inventions further patentably distinguish the invention from the cited art. For example, new claim 36 recites that "the message is received into the fibre channel switch by the first application and sent by the first application out of the fibre channel switch." Claim 37 requires that "the message is sent by the first application to another application." The cited references also fail to teach or suggest such limitations.

In view of the foregoing, Applicants believe all rejections have been overcome thereby placing all independent and dependent claims now pending in this application in condition for allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at the number provided below.

Respectfully submitted,

BEYER WEAVER & THOMAS, LLP

  
Mary R. Olynick  
Reg. 42,963

P.O. Box 70250  
Oakland, CA 94612-0250

(510) 663-1100

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